

SHOSTAK, F.T., kand.tekh.nauk; LYUBMAN, N.Ya.; IMANGAZIYEVA, G.K.

Synthesis of oxygen-containing hydrocarbon-formaldehyde resins and their
use as bridging agents. Vest. AN Kazakh.SSR 19 no.10:27-32 0 '63.
(MIRA 17:1)

L 19L23-65 ENT(m)/ENP(j) Pc-L RM/RWH

ACCESSION NR: AR4048162

S/0081/64/000/011/S074/S074

SOURCE: Ref. zh. Khimiya, Abs. 11S474

AUTHOR: Lyubman, N. Ya., Khostak, F. T., Imangaziyeva, G. K.

TITLE: Membranes based on styrene-formaldehyde resins. Report I. The synthesis of styrene-formaldehyde resins

CITED SOURCE: Izv. AN KazSSR. Ser. tekhn. i khim. n., vy*p. 3, 1964, 9-14

TOPIC TAGS: ion exchange resin, styrene formaldehyde resin, copolymer composition, styrene copolymer, formaldehyde copolymer

TRANSLATION: The authors synthesized highly selective ion exchange membranes based on styrene-formaldehyde resins; 30% formalin, H_2SO_4 (specific gravity 1.84) and redistilled styrene were placed in a flask in that order (with a broad range of ratios between the components). The reaction continued for 6 hours at 95-96C, after which the organic layer was separated, dissolved in an equal volume of toluene, and washed with hot water, then with 1% NH_4OH and finally again with hot water to a neutral reaction. The product was dried for 24 hours over $CaCl_2$, after which the traces of water were distilled off in the

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L 19423-65

ACCESSION NR: AR4048162

form of an azeotropic mixture with toluene in a vacuum at 60C. Seven samples of resin with a styrene-formaldehyde ratio of from 1:0.5 to 1:4 had a molecular weight of 215-313, a specific gravity of 1.0519-1.1470, and an index of refraction n_D^{20} of 1.5400-1.5857. The maximal content of chemically bound oxygen (45%) was obtained at a styrene: formaldehyde ratio of 1:4. The probable mechanism of the reaction between styrene and formaldehyde is discussed. V. F.

SUB CODE: OC, MT

ENCL: 00

Card 2/2

L 23080-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/EM

ACCESSION NR: AP4049826

S/0360/64/000/003/0082/0086

AUTHOR: Imangaziyeva, G.K.; Gabdrakipov, V.Z.; Lyubman, N.Ya.; Shostak, F. T.; Dzhamaletdinova, M.K.

TITLE: Structure and composition of styrene and formaldehyde interaction products prepared under various conditions

SOURCE: AN KazSSR. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1964, 82-86

TOPIC TAGS: styrene formaldehyde resin, styrene copolymer, formaldehyde copolymer, Polymer structure, infrared spectroscopy

ABSTRACT: When treated with sulfuric acid, styrene-formaldehyde resins from cross-linked tridimensional polyelectrolytes with fixed sulfo-groups attached to the aromatic nucleus. The present authors undertook a study (by infrared spectroscopy) of the structure and composition of these resins depending on the concentration of sulfuric acid and the reaction time. The experimental method is described in detail and the results (resin yield; styrene used; C, H and O content; mol. weight; d_{20}^{20} , n_D^{20}) are tabulated in relation to the formaldehyde/styrene molar ratio (0.5:1 - 3:1), H_2SO_4 concentration (10 to 55% in the water phase) and reaction time (1-48 hrs). It was found that the direction of the reaction is determined by the H_2SO_4 concentration in the reaction mass: up to 40% H_2SO_4 , the

Cord 1/2

L 23080-65

ACCESSION NR: AP4049826

predominant product is phenyl-1, 3-dioxane; at 40-50% H_2SO_4 - the products are chiefly styrene-formaldehyde resins with linear acetal chains incorporated in them. Orig. art. has: 1 figure, 5 chemical formulas and 1 table.

ASSOCIATION: None

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 004

OTHER: 001

Card 2/2

LYUBMAN, N.Ya.; SHOSTAK, F.T.

Synthesis of ion-exchange membranes. Trudy Inst. Khim. Nats. Akad. Nauk Kazakh. SSR 11:56-88 '64. (MIRA 17:11)

L 21340-65 EWT(m)/EWP(j)/T Pc-4 RWE/RM

ACCESSION NR: AT5001009

S/2850/64/011/000/0095/0097

AUTHOR: Lyubman, N. Ya., Shostak, F. T., Imangaziyeva, G. K., Vaganov, V. D.,
Bakharev, Yu. I.

TITLE: Some electrochemical and physicochemical properties of the Ankalit K-1 membranes

SOURCE: AN KazSSR. Institut khimicheskikh nauk. Trudy, v. 11, 1964. Sintez i issledovaniye vysokomolekulyarnykh sovedineniy (Synthesis and research of high-molecular compounds), 95-97

TOPIC TAGS: ion exchange membrane, membrane mechanical property, membrane electrochemical property, polyelectrolyte composition, polystyrene membrane, polyethylene membrane, sulfonated polymer, ultrafiltration membrane

ABSTRACT: Chemical composition was found to have a significant effect on the electrical and mechanical properties of "Ankalit K-1" membranes, i.e., 3-dimensional polyelectrolytes containing linear, inert, and thermoplastic macromolecules, and prepared from 36-52 wt% polystyrene, 10-40 wt% of a special, unspecified, crosslinking agent, and polyethylene. Crosslinking and chemical treatment converts polystyrene into a crosslinked polymer with

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L 21340-65

ACCESSION NR: AT5001009

bonded ionogenic groups; thus, sulfonation yields highly acidic monofunctional membranes. The electrical resistance decreases with increasing polystyrene concentration and increases with the amount of crosslinking agent used. The potential and selectivity of the membrane increase with the degree of crosslinking of the polyelectrolyte present; the mechanical strength similarly increases while the permeability to water decreases. Selectivity goes through a maximum with increasing amounts of polyelectrolyte and this maximum shifts to a higher concentration of polyelectrolyte in highly crosslinked membranes. The latter are recommended for electrodialysis, but a lower degree of crosslinking is needed for membranes used in ultrafiltration. Orig. art. has: 4 figures.

ASSOCIATION: Institut khimicheskikh nauk, Akademiya nauk Kazakhoskoy SSR, (Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT

NO REF SOV: 004

OTHER: 000

Card 2/2

L 21341-65 EWT(m)/EWP(j)/T Pc-4 BSD/SSD/AFWL/APGC(b)/ESD(gs)/ESD(t)
 RWH/RM
 ACCESSION NR: AT5001011 S/2850/64/011/000/0104/0107

AUTHOR: Lyubman, N. Ya., Agashkin, O. V., Kushnikov, Yu. A., Kartseva, I. I.,
 Shostak, F. T., Imangaziyeva, G. K. B+

TITLE: Membranes based on styrene-formaldehyde resins. Part 2. A study of the structure of styrene-formaldehyde resins by infrared spectroscopy

SOURCE: AN KazSSR. Institut khimicheskikh nauk. Trudy, v. 11, 1964. Sintez i issledovaniye vysokomolekulyarnykh soyedineniy (Synthesis and research of high-molecular compounds), 104-107

TOPIC TAGS: styrene formaldehyde resin, polystyrene membrane, infrared spectroscopy, polymer composition, styrene polymerization

ABSTRACT: Styrene-formaldehyde resins were prepared by a method described in the first part of the paper (Izv. AN KazSSR, Seriya Khim. i Tekhn. Nauk (1963), #3), involving condensation in the presence of 45% sulfuric acid and when 0.5:1 to 3:1 molar ratios of formaldehyde to styrene; they were analyzed by infrared spectroscopy of the membranes or their solutions in carbon tetrachloride. The spectra shown in Fig. 1 of the Enclosure proved the absence of vinyl groups; thus, the reaction proceeds with the participation and

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L 21341-65

ACCESSION NR: AT5001011

elimination of double bonds in the styrene chain. Oxygen is bonded into ether and acetal groups, and the length of the acetal chain increases with the feed concentration of formaldehyde. Aromatic rings do not form a part of the linear chain, whose terminals are formed by hydroxyl and methyl groups. Ketone groups are present, but the low intensity of the corresponding bands indicates a low concentration. Selected structures for the chain of styrene formaldehyde resins are proposed. Elemental composition, molecular weight, specific gravity, and refractive index of the studied specimens were determined and tabulated. Orig. art. has: 2 tables, 1 figure, and 4 formulas.

ASSOCIATION: Institut khimicheskikh nauk, Akademiya nauk Kazakhskoy SSR (Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR)

SUBMITTED: 00

ENCL: 01

SUB CODE: MM

NO REF SOV: 002

OTHER: 000

Card 2/3

SHOSTAK, F.T.; SEREDIN, B.I.; LYUBMAN, N.Va.; TCHAY, A.A.

Ion-cathosis method of demineralization. Trudy Inst. khir. nauk AN
Kazakh. SSR 11:164-169 '64. (MIRA 17:11)

SHOSTAK, F.T.; BESMAN, V.L.; SHISHLYANNIKOV, L.A.; TSKHAY, A.A.; LYUBMAN N. Ya.;
KATSOVICH, F.A.

Study of critical velocities for the labyrinth-type electrodesalizers in
the process of water demineralization. Trudy Inst. khim. nauk AN Kazakh.
SSR 11:170-175 '64.

L 21336-65 EWT(m)/EWP(j)/T Pc-4 RWH/RM

ACCESSION NR: AT5001017

S/2850/64/011/000/0176/0178

AUTHOR: Vaganov, V.D., Lyubman, N.Ya., Shostak, F.T., Kulumbetova, K. Zh.

TITLE: Determination of the water permeability of ion exchange membranes 1 BT/

SOURCE: AN KazSSR. Institut khimicheskikh nauk. Trudy, v. 11, 1964. Sintez i issledovaniye vysokomolekulyarnykh sovedineniy (Synthesis and research of high-molecular compounds), 176-178

TOPIC TAGS: Ion exchange membrane, membrane permeability, water permeability

ABSTRACT: The authors describe an apparatus for determining the water permeability of ion exchange membranes, consisting of a movable and a fixed cell, separated by the 5 x 5 cm membrane, which is deaerated in 40C water in a vacuum to the total removal of its air content; units for the generation of pressure and adjustment to zero point position, a manometer, and a micropipette for measuring permeability are described. Immersion of the sealed unit in water eliminates losses of liquid which are shown to cause relative errors of approximately 50%. Permeability is determined for distilled water and under 1 kg/cm² pressure, and formulas are presented for calculating both the coefficient of permeability

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L 21336-65

ACCESSION NR: AT5001017

D and the specific permeability K. The latter term includes the effect of the thickness of the membrane and its magnitude for membranes of good quality is 10^{-14} cm³ · sec/g.
Orig. art. has: 1 table, 2 figures and 2 formulas.

ASSOCIATION: Institut khimicheskikh nauk, Akademiya nauk Kazakhskoy SSR (Institute of Chemical Sciences, Academy of Sciences of the Kazakh SSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, GC

NO REF SOV: 004

OTHER: 000

Card 2/2

STUPNIKOV, B.Ya.; LYUBMAN, S.M.

Establishment of technical norms is an important part of
the scientific organization of work. Der.prom. 14
no.11:17-20 N '65. (MIRA 18:11)

1. Moskovskiy mebel'no-sbornochnyy kombinat No.2.

FABRITSKIY, Khanon Borisovich; LYUBMAN, Semen Markovich; SEMENOV, A.I.,
red.; MEL'NIKOVA, M.S., red. izd-va; LOBANKOVA, R.Ye., tekhn. red.

[Reference book for establishing norms in the manufacture of
furniture] Spravochnik normirovshchika mebel'nogo proizvodstva.
Moskva, Goslesbumizdat, 1961. 279 p. (MIRA 14:7)
(Furniture industry) (Production standards)

FABRITSKIY, Khanan Borisovich; LYUBMAN, Semen Markovich; SEMENOV,
A.I., red.; BOYKO, L.I., red. Izd-va; GRECHISHCHEVA, V.I.,
tekhn. red.

[Manual for the standards setter in furniture manufacture]
Spravochnik normirovshchika mebel'nogo proizvodstva. Izd.2.,
perer. Moskva, Goslesbumizdat, 1963. 322 p.

(MIRA 17:2)

GALIYEV, U.Z.; KAVEYEV, M.S.; LYUBOCHKA, V.A.

Hydrochemistry of the Siukeev Caverns. Priroda 44 no.5:
93-94 My '55. (MLRA 8:7)
(Volga Valley--Caves) (Hydrology)

STANKEVICH, Ye.F.; PASHKEYEVA, S.I.; LYUBCHKA, V.A.

Change of the hydrochemical regimen of bodies of water in the rise of ground water caused by the construction of large reservoirs, based on the example of the Nizhniy Kaban and Sredniy Kaban Lakes. Gidrokhim. mat. 38:77-83 '64.

(MIRA 18:4)

1. Kazanskiy filial AN SSSR.

KLYUKHIN, Igor' Avksent'yevich; LYUBCHKIN, B.I., kand. tekhn.
nauk, dots., red.

[Measurements during the operation of marine power plants]
Izmereniia pri ekspluatatsii sudovykh silovykh ustanovok.
Moskva, Transport, 1964. 233 p. (MIRA 17:12)

LYUBOFEYEV, V.N.

Ore potential of small intrusions in southern Transcaucasia as illustrated by molybdenum deposits in the Erivan-Ordubad synclinorium.

Trudy KF VNII no.4:291-299 '60.

(MIRA 13:11)

(Transcaucasia—Molybdenum ores)

LYUBOFEYEV, V.N.

Morphological and petrochemical features of Neogene minor intrusions
in the Erivan-Ordubad synclinorium and the Caucasian mineral waters
region. Trudy KF VNII no.6:340-357 '61. (MIRA 15:2)
(Caucasus--Rocks, Igneous)

BALITSKIY, V.S.; LYUBOFEYEV, V.N.

Outline mineralogy and geochemistry of the Tuba group of complex
metal ores (northwestern Caucasus). Trudy KF VNII no.6:358-368
'61. (MIRA 15:2)

(Caucasus, Northern--Ore deposits)

BALITSKIY, V.S.; LYUBOFEYEV, V.N.

Finds of native copper in upper Tertiary volcanic rocks in the
Nakhichevan A.S.S.R. Izv. AN Arm.SSR.Geol.i geog.nauki 14 no.4:
69-71 '61. (MIRA 14:9)

1. Krasnodarskiy filial Vsesoyuznogo nefte-gazovogo nauchno-
issledovatel'skogo instituta, g. Krasnodar.
(Nakhichevan A.S.S.R.--Copper)

LYUBOFEYEV, V.N.; BALITSKIY, V.S.

Orthite from the Gilutskiy granitoid massif. Izv. AN Arm.SSP. Geol.
i geog.nauki 14 no.5:23-29 '61. (MIRA 15:1)

1. Krasnodarskiy filial Vsesoyuznogo nefte-gazovogo nauchno-issle-
dovatel'skogo instituta, laboratoriya geologii rudnykh mestorozhdeniy.
(Armenia--Allanite)

BALITSKIY, V.S.; LYUBOFEYEV, V.N.

Physicochemical characteristics of mineral-forming solutions
as revealed by the studies of complex metal mineralization
in the northwestern Caucasus. Geokhimiia no.9:806-812
'62. (MIRA 15:11)

1. All-Union Oil-Gas Scientific Research Institute,
Krasnodar.
(Caucasus, Northern--Mineralogical chemistry)

BALITSKIY, V.S.; LYUBOFEYEV, V.N.

Conditions governing the localization and composition of
ores of the complex metal mineralization in the upper
Belaya Basin. Trudy KF VNII no.10:267-288 '62. (MIRA 15:11)
(Belaya Valley (Krasnodar Territory)—Ore deposits)

LYUBOFEYEV, V.N.

Some data on the metal potential of the Late Alpine
postfolding epoch in the Lesser Caucasus. Trudy KF
VNII no.10:308-317 '62. (MIRA 15:11)
(Caucasus—Metals, Rare and minor)

LYUBOGOSHCHINSKAYA, G.P.

Characteristics of the morphology of ore bodies and distribution
of mineralization in the Boordu and Granitnaya Gerka deposits.
Trudy Inst. geol. AN Kir. SSR no.10:109-124 '58.

(MIRA 12:9)

(Kirghiz Range--Ore deposits)

LYUBOCHSKIY, I. P.; NEMCHINOVA, G. A.

Using the MVU-49 balanced bridge in measuring resistance by three-
wire circuits. Priborostroenie no.8:23 Ag '60. (MIRA 13:9)
(Bridge circuits) (Electric measurements)

BOGOMOLOV, K.S., red.; PERFILOV, N.A., red.; BELOVITSKIY, G.Ye., red.; DOBROSERDOVA, Ye.P., red.; ZHDANOV, G.B., red.; KARTUZHANSKIY, A.L., red.; LYUBOMILOV, S.I., red.; MINERVINA, Z.V., red.; RAZORENOVA, I.F., red.; ROMANOVSKAYA, K.M., red.; SAMOYLOVICH, D.M., red.; STARININ, K.V., red.; TRET'YAKOVA, M.I., red.; UVAROVA, V.M., red.; SHUR, L.I., red.; POPOVA, A.K., red.; VEPRIK, Ya.M., red.; VERES, L.F., red. izd-va; KUZNETSOVA, Ye.B., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[Nuclear photography; transactions] IAdernaia fotografiia; trudy tret'ego Mezhdunarodnogo soveshchaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 474 p. (MIRA 15:6)

1. Colloque International de Photographie Corpusculaire. 3d, Moscow, 1960. 2. Nauchno-issledovatel'skiy kinofotoinstitut, Moskva (for Bogomolov, Uvarova, Romanovskaya, Starinin). 3. Predsedatel' Organizatsionnogo komiteta Tret'yego Mezhdunarodnogo soveshchaniya po yadernoy fotografii. 1960, Moskva (for Bogomolov). 4. Zamestitel' predsedatelya Organizatsionnogo komiteta Tre'yego Mezhdunarodnogo soveshchaniya po yadernoy fotografii. 1960, Moskva (for Perfilov). 5. Radiyevyy institut im. V.G.Khlopina Akademii nauk, Leningrad (for Shur, Perfilov). 6. Institut sovetskoy trgovli im. F.Engel'sa (for Kartuzhanskiy). 7. Ob'yedinennyy institut yadernykh issledovaniy, Dubna (for Lyubomilov). 8. Institut atomnoy energii im. I.V.Kurchatova Akademii nauk SSSR, Moskva (for Samoylovich).

(Photography, Particle track)

1ST AND 2ND STEPS										3RD AND 4TH STEPS									
PROCESSES AND PROPERTIES INDEX																			
BC										B-II-1									
Rapid determination of camphene, for industrial control purposes. V. I. LAURONOV (From: Org. Chim., 1939, 6, 167-169).—1 c.c. of a solution of 1 g. of H_2SO_4 in 10 g. of 96-98% HCO_2H is dissolved in 100 c.c. of saturated aq. NaCl, and the solution titrated with 0.5N-NaOH (b c.c.), with phenolphthalein indicator. 2-5 c.c. of the solution under examination and 1 g. of H_2SO_4-HCO_2H mixture are shaken for 2-5 min., 100 c.c. of aq. NaCl are added, and the solution is titrated as above (c c.c.). Then % camphene = $6.8(b-c)/cp$, where c is the vol. of solution taken and p its sp. gr. R. T.																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
REGION 1										REGION 2									
SUBREGION 1										SUBREGION 2									
SUBSUBREGION 1										SUBSUBREGION 2									

pa

Rapid determination of bornyl chloride in pinene saturated with hydrogen chloride V. J. Lyubimov, *Org. chem. Ind.* (U. S. S. R.) 6, 1267 (1969). In the production of bornyl chloride (I) from pinene and HCl, I can be roughly detd. by alternate cooling at 12° and filtering of the reaction mixt. until the filtrate forms no ppt. The wt. of ppt. gives I. Chris. Blanc

7

U. S. S. R. METALLURGICAL LITERATURE CLASSIFICATION

Bornyl chloride and its isomers. I. V. I. Lyubimov, H. N. Rutorvskii and T. V. Sheremeteva. *J. Gen. Chem.* (U. S. S. R.) 9, 2067-74 (1939).—The velocity of splitting off of HCl from bornyl chloride by digestion with KOH at 160° was considerably higher than that from the liquid with chloride obtained by the treatment of dry α -pinene with HCl. Bornyl chloride yielded camphene mainly; after its distg. the residue was fractionated *in vacuo*, yielding some camphene, a mixt. of dipentene and limonene, a mixt. of $C_{15}H_{24}Cl$ (not identified), terpinol and terpenic alcs., and the residue, which after digestion with KOH yielded a liquid of d_4^{20} 0.875, n_D^{20} 1.4734, $[\alpha]_D^{20}$ -6.0°, contg. Cl 0.253%. The hydrocarbons obtained after digestion of the liquid chlorides were also fractionated *in vacuo*, yielding a mixt. of fenchenes and an unidentified bicyclic hydrocarbon b. 157.8-8.5°, d_4^{20} 0.8700, n_D^{20} 1.4743, MR_D 43.00, $[\alpha]_D^{20}$ -7.57°, mol. wt. 132. Acetylation of this hydrocarbon yielded a compd. with d_4^{20} 0.9701, n_D^{20} 1.4562, $[\alpha]_D^{20}$ -11.08°, which on sapon. yielded an alc. b. 86-87°, d_4^{20} 0.9599, n_D^{20} 1.4771, 10.5% OH group. The alc. was oxidized, yielding a neutral colorless liquid with the odor of camphor, d_4^{20} 0.9523, n_D^{20} 1.4668. The hydrocarbon treated with dry HCl, yielded a compd. which was transformed into a liquid at 34.7-35° (irreversibly).

A. A. Podgornov

A. A. Podgornyy

Kuskovtzy Chemical Plant

METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 3RD ORDERS										2ND AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
Camphene from essential oils. B. N. Ruzovskii, V. I. Lyubomirov and A. F. Plotnikov. <i>J. Applied Chem.</i> (U. S. S. R.) 13, 576-8 (in German, 578) (1940).—The hydrocarbon fraction of essential oil from <i>Adonis sibirica</i>, b. 140-5°, rectified from other components of oil, was isomerized in the presence of active-clay catalyst at 120°. The pinene was isomerized to camphene; this increases the amt. of the latter by 5-10%. The rectification of isomerized oil yielded pure camphene, almost quantitatively. A. A. Podgorny																			
ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION																			

10 ca Preparation of pure camphene by the isomerization of pinene. M. Ya. Levshin, V. I. Lyubomilov, L. M. Pestov, A. F. Plotnikova and B. N. Rutovskii. <i>J. Applied Chem.</i> (U. S. S. R.) 13, 1178-81 (in German, 1181) (1940).—The dynamics of the isomerization of pinene fractions (from turpentine) was investigated as follows. An activated clay was added (0.1-1% by wt) to the sample of pinene at 120°. After heating for 10-30 min. to a certain temp. a sample was taken out and the reaction mixt. was heated again until withdrawal of another sample. The sample was filtered and the camphene content was detd. by the Lyubomilov method (C. A. 33, 7230). The d. of the fraction with a pycnometer and its n were detd. The content of polymers was detd. by weighing the residue after steam distn. of the volatile substances. The isomerized products were rectified by distn. The curves $\Delta n/\Delta t$ (difference between the n of the isomerized and in al substances) vs. time, d_4^{20} vs. time, the polymer content vs. time and the content of camphene (as isobornyl formate) formed vs. time were constructed. The above curves had the same characteristics for all expts. With the exception of the last curve which had a max., the curves showed a continuous increase in d., $\Delta n/\Delta t$ and the polymer content.		The low-boiling fraction which was obtained in the isomerization of pinene contained an unidentified substance. A. A. Podgorn
458.554 METALLURGICAL LITERATURE CLASSIFICATION		1000-10000
1000-10000	1000-10000	1000-10000

1ST AND 2ND CROSSL										3RD AND 4TH CROSSL									
PROCESSING AND PROPERTIES INDEX																			
ca										10									
Camphene. V. I. Lyubomilov, M. Ya. Levshuk, L. M. Pesin, A. V. Vasil'eva, A. F. Plotnikova and B. N. Rutovskii. Russ. 60,004, Feb. 23, 1941. Camphene is prepd. by isomerizing pinene at elevated temp. and in the presence of a catalyst, such as activated clay; then an addnl. amt. of the same or another catalyst is introduced and the temp. increased to polymerize admixts. in the camphene. The camphene is sepd. in the usual manner.																			
A 10.31.4 METALLURGICAL LITERATURE CLASSIFICATION										E-EXTENDED TABLE									
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REGION 95										REGION 96									
REGION 97										REGION 98									
REGION 99										REGION 100									

1ST AND 2ND ORDERS

PROCESSING AND PROPERTY INDEX

Ca

Concerning β -pinene of Russian turpentine V. I. Lyubomirov. *J. Applied Chem. (U.S.S.R.)* 14, 605 N (1941) - A sample of com.-run Russian turpentine derived from firs (probably from *Pinus sylvestris*) was carefully fractionated and the constituents identified as follows: 67% α -pinene, 7-9% β -pinene, 17-18% δ -3-carene and 2-3% β -limonene. The definite proof of the presence of β -pinene was established by isolation of a fraction b 165.5 $^{\circ}$, from which by treatment with HCl there was isolated bornyl chloride, and on oxidation with alk KMnO_4 , nopinic acid, m. 126.5-7.5 $^{\circ}$. G. M. K

7

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNOPTIC

1ST ORD. 22

2ND ORD. 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

3RD ORD. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

4TH ORD. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

5TH ORD. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

ca

Concentration of formic acid. V. I. Lyubomilov. *J. Chem. Ind. (U. S. S. R.)* 18, No. 6, 34-5 (1941); *Chem. Zentr.* 1942, II, 2419. -- When 83.7 and 94.4% HCO_2H are refluxed 3 hrs. with anhyd. CuSO_4 and allowed to stand 24 hrs. at room temp. before distg. at 40-5° at 30-40 mm., they give 97% of 88.5% acid. H. M. L.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										100 AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
10 ca Catalyst for converting pinene into camphene. V. I. Lyubomirsky, U.S.S.R. 64,839, May 31, 1945. Clay prepd. according to Tishchenko and Rudakova (cf. abstr. from J. Applied Chem. (U.S.S.R.), C.A. 28, 40529), is moistened with pinene or turpentine, heated for 1-2 hrs. at 140-160°, filter-pressed, washed with alc., dried for 0.5-1.0 hr. at 120°, and ground. With this catalyst, the yield of camphene is above 70%.																			
ASB-51A METALLURGICAL LITERATURE CLASSIFICATION										6-2-1000000									
REGIONAL SYMBOLISM										REGIONAL SYMBOLISM									
GROUPS										GROUPS									

18

THE NATURE OF SOME CATALYSTS USED IN THE ISOMERIZATION OF PINENE. I. B. N. RUTORALDI AND V. L. LYNNBOMBOV. *J. Applied Chem. (U.S.S.R.)* 20, 3175-3176 (1947) (Russian). —The catalyst, "S-20", was prep'd. from the residue of $\text{Al}(\text{SO}_4)_3$ production by the action of H_2SO_4 on kaolin or on asphaltene. The residue is ground and dried at 130°-3 hrs. Other samples were prep'd. from the "alum cake", the residue of treatment of clay with H_2SO_4 ; ground samples of the cake were ext'd. with H_2O in a tank, varying from 2:1 to 5:1; decanted, and dried at 120-130° 4-5 hrs. Isomerization of a rosin turpentine fraction with 93-98% pinene into camphene (det'd. by the content of formylated compds.), at 150°, with these catalysts, rises rapidly in the initial stages, reaches a max., and then falls off slightly; at the max., the yields vary with the method of prep'n. of the catalyst, e.g., Si-oxol with kaolin, asphaltene, cake and activated clay, amt. 0.2, 3.0, 3.0, and 0.4%, resp.; length of run 4.5, 6, 6, and 1.6 hrs., resp.; max. isomerization yields 56.5, 49.3, 53.7 and 54.0%, resp.; at the same time, polymerization of the pinene, det'd. by the change Δn_D of the refractive index, attained $\Delta n_D = 0.0107$, 0.0080, 0.0100, and 0.0120, resp. In order to det. the optimum compn. of the catalysts, further prepns. were made by treating clays with H_2SO_4 , washing, and drying under definite conditions, and the catalysts were analyzed. Best isomerization yields were obtained with catalysts made by treating 50 g. clay with 100 cc. of 53% H_2SO_4 at 150-170° 5-30 min. (time is immaterial), adding 14.0 drops to the hard mass, soaking in 500 cc. H_2O for 24 hrs., decanting, and drying at 130-140° 4 hrs. At 150-155°, highest isomerization yields, 74.0, 76.0, and 78.3%, corresponded to catalysts (1.0, 1.5, and 1.5%, resp.) analyzing (wt. $\text{Al}(\text{SO}_4)_3$, insol. SiO_2): 31.30, 10.01, 2.44, 5.37, 11.99, 33.24, 35.97, 6.76, 2.37, 2.37, 0.00, 41.23; and 32.72, 9.69, 0.55, 4.33, 11.13, 42.18%. In

the 3 cases, the content of $Al_2(SO_4)_3$ in the sum $Al_2(SO_4)_3 + H_2SO_4$ is 74.71, 83.80, and 78.20%, resp.; hence, the most effective catalyst is provided by the hydrated acid sulfate $Al_2(SO_4)_3 \cdot H_2SO_4$ on finely divided SiO_2 , the carrier making up about 40% of the catalyst. Low contents of the salt result in diminished isomerization and increased polymerization of the pinene. II. *Ibid.* 625-9. — Neither $Al_2(SO_4)_3$ nor SiO_2 alone has any catalytic effect in the isomerization. Their mixts., and the mixts. with H_2SO_4 , give only extremely low yields of camphene. That the detg. factor for the catalytic activity is deposition of the acid $Al_2(SO_4)_3$ on the active SiO_2 at the very stage of the formation of the carrier surface was demonstrated directly by adding 0.3021 g. $Al_2(SO_4)_3$ and 0.108 g. H_2SO_4 in 60 cc. H_2O to 50 cc. of a 0.3% SiO_2 sol made from Na_2SiO_3 and H_2SO_4 and dialyzed; the soln. was evaporated to coagulation, the coagulate dried at 140° 3.6 hrs. and powdered. With 1% of this catalyst, the reaction at 120° was violent, resulting in low isomerization (8.9%) and very high polymerization ($\Delta n_D = 0.0236$ after 1 hr.); with only 0.2% of the catalyst, added in 2 portions, isomerization attained 44.2% in 2 hrs., with polymerization only $\Delta n_D = 0.0038$. Catalysts with sulfates other than $Al_2(SO_4)_3$ on finely divided SiO_2 are also effective, but less so than $Al_2(SO_4)_3$. Silicates of Mg, Ni, Cr, Fe, metal salts, washing and calcination for 2-3 hrs., were treated with 62.5% H_2SO_4 at $140-150^\circ$, extd. with H_2O and dried at $120-140^\circ$ 3-4 hrs. The cc. of H_2SO_4 and H_2O used in the prepn. of the sulfates, per 1 g. silicate, were: Na_2SO_4 2.6; $Al_2(SO_4)_3$ 1.9; $NiSO_4$ 1.9; $Al_2(SO_4)_3$ 2.12; $Cr_2(SO_4)_3$ 1.9. With these catalysts (1% except $Cr_2(SO_4)_3$, 2%) the yields were, in the order stated: isomerization 38.2, 41.4, 45.6, 64.3, 66.3, 63.0%; polymerization Δn_D 0.0040, 0.0040, 0.0057, 0.0080, 0.0148, 0.0050, in 3, 2, 1, 3, 5, 4, 3 hrs. resp.

N. Thun

CA

Condensation of formaldehyde with sodium butoxide
V. I. Lyubomilov and A. P. Terent'ev. *Zhur. Obshch. Khim.* (J. Gen. Chem.) 21, 1479-84 (1951). Into 1444 g. pure BuOH and 150 g. Na was passed 221.5 g. gaseous CH₂O at 120° over 7-7.5 hrs.; 0.48 l. H₂ was collected and steam distn. of the mixt., followed by extensive fractionation, gave about 3% 2-methylbutanol, b. 128-9°, n_D²⁰ 1.4102, d₄²⁰ 0.8200, and 11% 2-ethylbutyl al. (l. b. 140-145°, n_D²⁰ 1.4334, d₄²⁰ 0.8550). Close fractionation of the products was not very successful and identification and estm. of yield was done deductively. Warming the fractions contg. I with dil. H₂SO₄ gave 2-methylbutanal (II) identified with 2,4-dinitrophenylhydrazine, m. 118-8.8° (the same as in literature). II was also obtained from the Grignard reagent from ac-BuBr with HCN-CH₃. G. M. Kosolapoff.

CR

The condensation of formaldehyde with sodium butoxide
V. I. Lyubomilov and A. P. Terent'ev *J. Gen. Chem*
USSR 21, 1013-18 (1951) (Engl. translation) See *CA*
46:24804 B R

SERGEYEV, P.G. [deceased]; LYUBOMILOV, V.I.; BOGATYREVA, A.N.

Simple method of synthesis of butyne-2-diol-1,4. Khim. nauka i prom.
2 no.2:272 '57. (MLBA 10:6)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Butyne)

Distr: 4E11/4E3d 7
 Preparation of carboxylic acids from primary alcohols at low temperatures (V. I. Lyubimov, A. I. Kutsenko, and R. A. Abramova. *Zhur. Obshchei Khim.* 27, 2054-7 (1957).
 A solution of RONa; prepd. either by reaction of ROH and Na or by azeotropic removal with MePh of H₂O from a soln. of NaOH in ROH, was stirred with catalyst added (Ni on Cr oxide or basic Cu carbonate) and H₂O gradually added in an amt. equiv. to that of evolved H₂. At completion of the reaction, solid NaOH was added, preferably in the presence of 2-ethylhexanol as a solvent and diluent, after which the mixt. was dild. with H₂O, freed of ROH with steam, filtered, evapd., and acidified yielding the appropriate aliphatic acids. In this manner BuOH at 120-5° gave 69.5% Pr-CO₂H, iso-AmOH gave at 130-41° 71% iso-BuCO₂H, 1,4-butanediol at 128-53° gave a little succinic acid, and 1,6-hexanediol at 138-68° gave some adipic acid.

G. M. Kosolapoff 11

pm of

Lyubomilov, V. I.

79-1-1/1

AUTHORS: Lyubomilov, V. I. , Belyanina, Ye. T.

TITLE: On the Products Forming in the Condensation of n-Butanol in the Presence of Sodium Butylate and a Copper Catalyst (O produktsakh, obrazuyushchikhsya pri kondensatsii n-butana v prisutstvi butilata natriya i mednogo katalizatora)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 307-308 (USSR)

ABSTRACT: In the production of 2-ethylhexanol by means of condensation of n-butanol in the presence of sodium butylate and the dehydrating catalyst (reference 1) the hydrogen eliminated in the reaction has the smell of butyric aldehyde. This aldehyde was proved by the production of 2,4-dinitrophenylhydrazone. It further became evident that in the division of the reaction products the fraction 1.C-105°C which corresponds to 2-ethylhexanol-1 contains unsaturated compounds. This is characterized by the bromine number. It must be emphasized that in an accurate rectification of the fraction 1.C-105°C the final fractions show much higher bromine numbers than the average ones. This probable the assumption of an occurrence of the second isomers of 2-ethylhexanol-1. From this fraction the authors separated an unsaturated alcohol of 2-ethylhexanol-1. It is identical with the alcohol obtained by Braun and Mante (reference) in the dehydration of octoglycether. They ascribe to this alcohol the

Card 1/2

On the Products Forming in the Condensation of n-Butanol in the Presence of Sebacic Butyrate and a Copper Catalyst

structure of α -ethyl- β -n-propylalcohol. Acid products were separated from the reaction mixture by the distillation of n-butanol and were investigated. The acid products collected from a number of experiments, 700 g, were rectified in a column. The yield and the properties of the fractions obtained are given in the table. The fraction with the acid number zero represents a colorless liquid, more viscous than the preceding fractions, which is insoluble in water and soluble in organic solvents. On treatment of this fraction with 2% aqueous alkali and on slight heating, it readily dissolves. On oxidation with sulfuric acid it is eliminated in an unchanged state. Thus the lactone $C_{11}H_{20}O_2$ was separated besides butyric and 2-ethylcapronic acid. Therefore Table, and 4 non-Slavic references.

SUBMITTED: February 4, 1957
AVAILABLE: Library of Congress

Card 2/2

Lyubomir L. I.

AUTHOR: Lyubomir, V. I.

TITLE: Interaction of Butyric Aldehyde With a Sodium Acetate Solution in n-Butanol (Vzaimodeystviye maslyanogo al'dehida s rastvorom acetata natriya v n-butanele)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, p. 3. - 34 (SSR)

ABSTRACT: The condensation of n-butanol in the presence of its sodium acetate and a catalyst (reference 1) beside 2-ethylhexanol-1 also leads to the formation of a corresponding unsaturated alcohol. In connection with the preceding works the author could satisfy himself of the formation of the above-mentioned alcohols with the interaction of butyric aldehyde with the sodium acetate solution in n-butanol (references 2, 3). They were actually obtained in this reaction and separated. It is assumed that 2 isomers of 2-ethylhexanol are present in the fraction corresponding to the mixture of 2-ethylhexanol-1 and the unsaturated alcohols. One of these isomers was eliminated in a pure state and proved to be identical with the alcohol eliminated from the condensation product of n-butanol (reference 1). One of its properties, the capability of isomerizing to 2-ethylhexanol-1 on passage over a glowing wire, must be mentioned. The experimental results are given in the table. There are 1

Card 1/2

7-10/71
Interaction of Butyric Aldehyde With a Sodiumantilate Solution in A-B Sol

table, and 3 references, all of which are Slavic.

ASSOCIATION: Scientific Research and Planning Institute for Plastics
(Nauchno-issledovatel'skiy i proyektnyy institut plasticheskikh mass)

SUBMITTED: February 4, 1967

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Lyubomilov, V. I., Kutsenko, A. I. 004/79-28-7-35, 61

TITLE: On the Intermediates in Condensation Reaction of Isoamyl Alcohol (O promezhutochnykh produktakh reaktsii kondensatsii izoamilovogo spirta)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 7, pp. 1885-1887 (USSR)

ABSTRACT: In the conversion of isovaleraldehyde with a sodiumisoamylate solution in isoamyl alcohol (Ref 4) two unsaturated alcohols are formed: 2,6-dimethyl-3-methylol heptene-4 and 2,6-dimethyl-3-methylol-heptene-3. From these alcohols gradually the 2,6-dimethyl-3-methylol-heptane-3 is formed which has to be regarded as condensation product of isoamyl alcohol in the presence of its alcoholate (Ref 2). When the latter reaction is carried out in another way it has to be expected, of course, that the two mentioned unsaturated alcohols would occur as intermediates, and not only one as is, e.g. shown in the scheme of one of the authors (Ref 3). The same appears in another scheme closely related to the first one, which was published later (Ref 4). In the present paper the authors carried out the condensation of isoamyl alcoholate in the

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SOV/79-28-7-35, 64

On the Intermediates in Condensation Reaction of Isoamyl Alcohol

presence of its alcoholate and of a dehydrating catalyst. The investigation of the reaction product showed that besides the main product, the 2,6-dimethyl-3-methylol heptane, the two above mentioned unsaturated alcohols are present in about the same quantities. There are 1 table and 4 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass
(Scientific Research Institute for Plastics)

SUBMITTED: June 21, 1957

1. Isoamyl alcohol--Chemical reactions
2. Condensation reactions
3. Alcohols--Chemical reactions

Card 2/2

KUTSENKO, A.I.; LYUBOMILOV, V.I.

Preparation of 2-ethyl-1-hexanol by condensation of n-butanol.
Zhur. prikl. khim. 31 no.9:1419-1426 S '58. (MIRA 11:10)

1. Laboratoriya organicheskogo sinteza nauchno-issledovatel'skogo
instituta plastmass.

(Butyl alcohol) (Hexyl alcohol)

SOV/86-58-1-34/11

AUTHORS: Kutsenko, A.I., Lyubomilov, V.I. and Abramova, R.A.

TITLE: Synthesis of Isoolecyl Alcohol and Esters Based on It (Sintez izoleitsilovogo spirta i polucenije slozhnykh efirov na ego osnove)

PERIODICAL: Zhurnal prikladnoy khimii, 1958, Nr 1, pp 211-213 (USSR)

ABSTRACT: The di-ester of the oleic acid was tested as a plasticizer for the polyvinyl chloride and found to be suitable for using in industry for the manufacture of hose masticated rubber and other materials. The properties of masticated rubber obtained are presented in the tabular and graphical forms. The masticated rubber with a frost-resisting property of -30°C possesses the specific volume resistance of $3.0 \times 10^{14} \Omega \cdot \text{cm}$, and that with the frost-resisting property of -45°C possesses the specific volume resistance of $5.5 \times 10^{12} \Omega \cdot \text{cm}$. There are 2 tables, 1 graph and 4 references, 3 of which are Soviet and 1 English.

Card 1/2

Synthesis of Iso-decyl Alcohol and Esters Based on It

SOV/80-59-1-34/14

ASSOCIATION: Laboratoriya organicheskogo sinteza. Nauchno-issledovatel'skoye instituta plastmass (Laboratory of Organic Synthesis of the Scientific Research Institute for Plastics)

DATE ISSUED: May 3, 1980

Card 1/2

LYUBOMILOV, V.I.; USEVICH, T.D.

Determination of combined water in some formaldehyde polymers.
Plast.massy no.2:67-68 '61. (MIRA 14:2)
(Formaldehyde) (Water)

LYUBOMILOV, V. I.; MERKULA, N. N.

Isomeric 2-ethylhexenols formed during 1-butanol condensation. Zhur. ob. khim. 33 no.1:22-27 '63.

(MIRA 16:1)

1. Nauchno-issledovatel'skiy institut plastmass.

(Hexenol) (Butyl alcohol)

LYUBOMILOV, V.I.

"Chemistry and technology of camphor" by G.D. Rudakov.

Reviewed by V.I. Liubomilov. Zhur. VKHO 7 no.6:683

'62.

(MIRA 15:12)

(Camphor)
(Rudakov, G.D.)

ACCESSION NR: AP4041802

S/0080/64/037/007/1620/1621

AUTHOR: Lyubomilov, V. I.; Cherkasskaya, Ye. L.

TITLE: Synthesis of trioxane

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 7, 1964, 1620-1621

TOPIC TAGS: trioxane, synthesis, reaction condition, conversion, process, formaldehyde

ABSTRACT: A study was made of the yield and rate of formation of trioxane made by reacting concentrated aqueous solutions of formaldehyde and H_2SO_4 and distilling the trioxane fraction. Metal-free formalin containing 58-62% formaldehyde was reacted in a flask with a 15 theoretical plate distillation column. Trioxane was extracted with methylene chloride from the trioxane fraction (boiling at 90-92C and higher) which also contained water and formaldehyde. Results are summarized in the enclosed figure. The amount of trioxane formed increased with increased distillation rate, reaching a maximum of 18.4 gm/hr (line 1, in figure 1 of the enclosure) (corrected to 17.5 gm/hr for average 60% formaldehyde concentration and 2.25% H_2SO_4), but the amount of trioxane in the fraction decreased (line 2). The

Card 1/3

ACCESSION NR: AP4041802

yield of trioxane was over 90% based on formaldehyde consumed at about 70% conversion. Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 24Dec62

DATE ACQ: 00

ENCL: 01

SUB CODE: GC, OC

NO REF SOV: 001

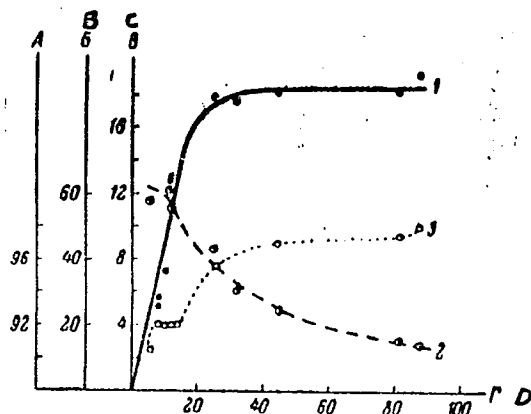
OTHER: 008

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ACCESSION NR: AP4041802

ENCLOSURE: 01

Fig. 1. Relationship between the amount of trioxane obtained, trioxane content in the fraction and boiling point, and the distillation rate
 A--boiling temperature (C),
 B--Trioxane content in the fraction (%)
 C--Amount of trioxane obtained from 100 gm. CH_2O (gm/hr)
 D--Distillation rate of fraction per 100 gm. of 60% formalin (gm/hr)
 1--amount of trioxane obtained
 2--trioxane content in fraction
 3--boiling temperature (C)



Card 3/3

LYUBOMILOV, V.I.; CHERKASSAYA, Ye.L.

Synthesis of trioxane. Zhur.: prikl. khim. 37 no.7:1620-1621 J1 '64.
(MIRA 18:4)

1. Nauchno-issledovatel'skiy institut plastmass.

ZELENINA, Ye.N.; KALININA, L.S.; LYUBOMILOV, V.I.

Sulfite method for the quantitative determination of trioxane
in aliphatic solvents. Plast. massy no.5:57-58 '65.
(MIRA 18:6)

LYUBOMIR, A.V., starsniy prepodavatel'

Variant of the plotting of a curved surface. Nauch. trudy MTI
no.29:270-274 '64. (MIRA 13:4)

1. Kafedra nachertatel'noy geometrii i mashinostroitel'nogo
chercheniya Moskovskogo tekhnologicheskogo instituta legkoy
promyshlennosti.

LYUBOMIROV, B.D., inzhener radiopredpriyatiya.

Calculating the stretching of feeder line wires of receiver antennas.
Vest.sviazi 14 no.2:9-11 F '54. (MLRA 7:5)
(Radio, Short-wave--Antennas)

LYUBOMIROV, B.N.

On the hydrogeological regime of the Makhachkalin structure.
Geol.sbor. no.3:249-252 '55. (MLR 8:6)
(Caucasus, Northern--Water, Underground)

LYUBOMIROV, B.N.

Characteristics of karst occurrences in the Komi A.S.S.R.
Trudy VNIIGRI no.131:79-81 '59. (MIRA 12:9)
(Komi A.S.S.R.--Karst)

LYUBOMIROV, B.N.

Underground waters in the Timan--Pay-Khoy area in connection
with the evaluation of its oil and gas potentials. Trudy
VNIIGRI no.133:280-296 '59. (MIRA 13:1)

(Timan Ridge region--Petroleum geology)

(Timan Ridge region--Gas, Natural--Geology)

(Pay-Khoy region--Petroleum geology)

(Pay-Khoy region--Gas, Natural--Geology)

LYUBOMIROV, B.N.

"Water inclusions" in gas and oil pools in the southern Timan. Geol.
nefti i gaza 4 no.2:49-50 F '60. (MIRA 13:10)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy institut.
(Timan Ridge—Water, Underground)

IL'INA, Ye.V.; LYUBOMIROV, B.M.; TYCHINO, N.Ya.; TOKAREV, T.N.,
vedushchiy red.; SAFRONOVA, I.M., tekhn.red.

[Underground waters and gases of the Siberian Platform]
Podzemnye vody i gazy Sibirskoi platformy. Gos. nauchno-tekhn.
izd-vo nef. i gorno-topl.ivnoi lit-ry, Leningr. otd-nie.
1962. 289 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-
issledovatel'skii geologorazvedochnyi institut. Trudy,
no.189). (MIRA 15:11)

(Siberian Platform--Petroleum geology)
(Siberian Platform--Gas, Natural--Geology)

LYUBOMIROV, B.N.

Paleohydrogeological conditions governing the formation of
oil and gas pools in the Timan-Pechora area. Sov. geol. 6
no.11:89-99 N '63. (MIRA 17:1)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geolo-
gorazvedochnyy institut.

LYUBOMIROV, B.N.

Postsedimental alterations of rocks as a factor determining the trend of the process of the formation of salt composition in waters in the zone of impeded water exchange. Sov. geol. 8 no.5:83-89 My '65.

(MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy institut.

LYUBOMIROV, M., kandidat tekhnicheskikh nauk.

Choice of the best point and direction for take-off. Grazhd. av. no. 7:22 J1 '57. (MLRA 10-9)

(Aircrafts--Take-off)

LYUBOMIROV, N

I , Ed.

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.L)

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Vo "Sovetskiy Sport", 1957.

366 P. Illus., Tables.

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LYUBOMIROVA, I.M., aspirant

Dental caries of the indigenous population of arctic regions.
Teor. i prak. stom. no.5:214-216 '61 (MIRA 16:12)

1. Iz kafedry terapevticheskogo stomatologii (zav. - prof.
Ye.Ye. Platonov) Moskovskogo meditsinskogo stomatologicheskogo instituta.

LYUBOMIROVA, I.M.

State of periodontium in patients with rheumatic fever. Stomatologiya 43 no.1:33-37 Ja-F'64 (MIRA 17:4)

1. Kafedra terapevticheskoy stomatologii (zav. - prof. Ye.Ye. Platonov) i kafedra vnutrennikh bolezney (zav. - prof. D.F. Presnyakov) Moskovskogo meditsinskogo stomatologicheskogo instituta.

LYUBOMIROVA, K.A.

Palynological materials on the Paleogene stratigraphy of the
Taz Peninsula. Trudy VNIGRI no.158:66-91 '60. (MIRA 14:3)
(Taz Peninsula--Palynology)

LYUBOMIROVA, K.A.

Spores of Hamamelidaceae from Paleogene sediments in the northern
part of Western Siberia. Trudy VNIGRI no.239:191-213 '65. (MIRA 18:7)

GRINBERG, A.A.; MARSHAK, Ye.M.; LYUBOMIROVA, E.N.

Reaction of potassium chloroplatinate with norgallite. Inter.
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LYUBOMIROVA, K.S.

Some characteristics of damping of solar radiation in an ice layer. Izv. AN SSSR. Ser.geofiz. no.5:693-699 My '62.
(MIRA 15:8)

1. AN SSSR, Vysokogornyy geofizicheskiy institut.
(Solar radiation) (Ice)

LYUBOMIROVA, K.S. (Moskva)

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rays. Meteor.i gidrol. no.8:28-31 J1 [i.e.Ag.] '62. (MIRA 15:7)
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LYUBOMIROVA, K.S.

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opaque ice. Inform.sbor.o rab.Geog.fak.Mosk.gos.un.po
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LYUBOMIROVA, K.S.

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(Baksan River--Solar radiation)
(Baksan River--Ice on rivers,lakes,etc.--Optical properties)

LADYZHENSKIY, M.M.; LYUBOMIRSKAYA, S.I.; TANKHILEVICH, V.A.;
TOMASHEVSKAYA, I.A.; TSIRKEL', M.L.; GRANATMAN, V.V.,
red.

[Use of TK-3B, TKh-4B, and TKh-5B cold-cathode thyatronov
in pulse circuits] Opyt primeneniia tiratronov s kholo-
nym katodom tipov TK-3B, TKh-4B, TKh-5B v impul'snykh
skhemakh. Leningrad, 1964. 22 p. (MIRA 17:11)

LYUBOMIRSKAYA-GUSEVA, N. V.

Cand. Tech. Sci.

Dissertation: "Electrochemical Polishing of Metals," Moscow Order of the Labor Red Banner Higher Technical School imeni N. E. Bauman, 26 May 47.

SC: Vechernyaya Moskva, May, 1947 (Project #17836)

BOBOV, V.; YANOVICH, R. (Leningrad); VAYNSHTEYN, L. (Khar'kov);
KHUSAINOVA, Kh.; KOCHUROV, V.; SHTEREVERYA, G., gornyy inzhener-
ekonomist; LYUBOMIRSKIY, A.; MALENKOV, V., normirovshchik
(g. Noril'sk); VORONICH, V., normirovchik; POPOV, V.

From the editor's mail. Sots. trud 8 no.5:127-130 My '63.
(MIRA 16:6)

1. Predsedatel' byuro ekonomicheskogo analiza Dushanbinskogo
myasokonservnogo kombinata (for Khusainova). 2. Vladimirskiy
zavod "Avtopribor" (for Kochurov). 3. Shakhta No. 39, Donetskoy
Basseyn (for Shtereverya). 4. Nachal'nik otдела Tselinnoy
krayevoy planovoy komissii (for Lyubomirskiy). 5. Zamestitel'
nachal'nika Bereznikovskoy gorodskoy kontory svyazi (for Popov).
(Industrial management)
(Wage payment systems)

LYUBOMIRSKIY, A.N., starshiy inzh.

They converted to new wage conditions. Transp. stroi. 11 no.8:
61 Ag '61. (MIRA 14:9)

1. TSelinogradskaya normativno-issledovatel'skaya stantsiya.
(Wages)
(Railroads—Salaries, pensions, etc.)

Rational Dimensions of Hard-Alloy Tips of Hard Alloy for Cutting Tools. (In Russian.) E. I. Lyubimovskii, *Stanki i Instrument* (Machine Tools and Equipment), v. 20, Sept. 1949, p. 12-14.

Investigation of above revealed that existing dimensions of tips require revision from the point of view of establishing a more rational relation between width and thickness. Ratios of width to thickness are recommended for different purposes. Data are tabulated.

Lathe Tools with Varying Cutting Angle

By E. I. LYCHOMIRSKY (From *Stanki i Instrument*, No. 8, 1951, pp. 19-21, 9 illustrations)

The author proposes a varying cutting angle and front rake for lathe tools. In the light of our knowledge on chip formation, this geometry of the cutting edge should reduce cutting force fluctuations. Particular benefits are obtainable in intermittent cutting. Methods of grinding to obtain proposed geometry are discussed.

The process of chip formation varies according to the metal of the machined component. In the cutting of cast iron, the chip forms through a series of shear failures, and this process is accompanied by large fluctuations of the cutting force. In the cutting of steels, the chip forms through slipping or by fusion. The fluctuations of the cutting effort are less pronounced. Oscillations of the cutting force are a source of forced vibrations of the component, the machine, and the tool. The cutting edge of a high-speed steel tool can withstand considerable vibrations. Therefore, such tools perform well in the machining of both cast iron and steel. Hard metals are more brittle, and only the toughest types of hard metals are used for the machining of cast iron.

A method of reducing the fluctuations of the cutting force lies in the design of the tool. It is claimed that a cutting tool with a varying cutting angle (or a varying front rake), along the cutting edge, reduces the fluctuations of the cutting force.

The influence of the cutting angle on the formation of the chip is known. The main effect is a change in the nature and geometry of shearing and slipping in relation to the cutting edge. In Fig. 2, turning with a tool of varying cutting angle is shown diagrammatically. It may be assumed that each elementary width of the chip is associated with a constant cutting angle. In Fig. 3, a hypothetical fluctuating force is shown for each element of width. The effect of varying cutting angle is that fluctuations take place with a phase displacement. With a correctly chosen geometry we may achieve a resultant cutting force diagram shown by graph 1 in Fig. 4. Thus, under otherwise identical conditions, the fluctuations of the cutting force can be greatly reduced by means of a varying cutting angle and varying front rake. In this way, the harder and more brittle hard metals can also be used for the machining of cast iron, and the allowable cutting speeds can be considerably increased.

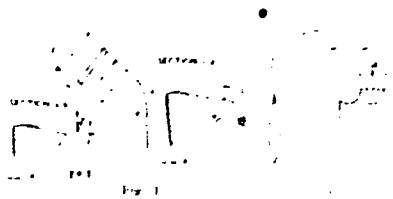


Fig. 1

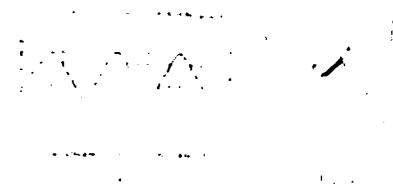


Fig. 2

The results of the experiments show that the maximum rate of metal removal is achieved when the cutting angle is 45 degrees. This is due to the fact that at this angle the cutting force is minimized, and the cutting speed is maximized. The results also show that the maximum rate of metal removal is achieved when the cutting depth is 0.1 mm.

occur at point C. Fig. 4. Figure 5 shows the geometry of a tool suitable for angular turning, embodying the principles of this article.

Some workshop trials have proved the advantages of a varying cutting angle. Under identical conditions, machining times between regrinds have been increased from 10 to 45 minutes. In the particularly trying case of intermittent cutting, owing to longitudinal gaps in the component, a tool of normal geometry proved useless. The tool with a varying cutting angle yielded 40 minutes of satisfactory machining between regrinds.

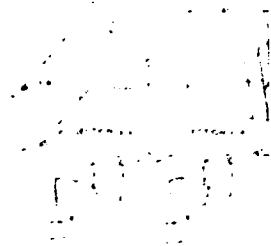


Fig. 3

It is seen in Fig. 1 that the characteristic geometry of the cutting edge with varying cutting angle is represented by the quantity

$$k = \frac{d\alpha}{dL} \quad (1)$$

which determines the change of front rake angle per unit length of the cutting edge. The increment of change of the front rake over the width of cut is given by the expression

$$\Delta\alpha = k \Delta L = \frac{d\alpha}{dL} \Delta L \quad \text{in degrees} \quad (2)$$

LYUBOMIRSKIY, Ye. I.

USSR. ~~GERM.~~

3068. Plastic connections for rubber hose and tubing. Ye. I. LYUBOMIRSKIY. Stanki i Instrument, 1953, 24, No. 12, 12-14; Plaste u. Kaut., 1954, 1, 183. Tubes and pipes of rubber or elastic synthetics are used in machine tools to lead cooling and lubricating media to moving parts. Suitable connectors, nozzles, and the like for rubber, polyvinyl chloride, and similar tubes, for pressures up to 550 kg/sq. cm are described.

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Lyubomirskiy, E. I.

USSR/Miscellaneous - Machine Tools

Card 1/1 Pub. 103 - 5/22

Authors : Lyubomirskiy, E. I.

Title : Fixed centers of heavy lathes

Periodical : Stan. 1 instr. 12, 15-17, Dec 1954

Abstract : Data regarding the proper selection of taper (conicity) for the supporting parts of lathe centers, are presented. The decisive factor determining the wear of the supporting part of centers appears to be the intensity of heat formation which, other conditions equal, depends upon the specific pressure on the friction surfaces. The forces affecting the lathe centers in case of clamping light-materials, when the weight of the object against the center is small in comparison to the clamping force, is explained. Table; graphs; drawings.

Institution :

Submitted :

LYUBOMIRSKIY E. I.

AUTHOR: Lyubomirskiy, E. I., Engineer

28-1-16/42

TITLE: Principles of Coordinated Standardization of Key Joints (Principy kompleksnoy standartizatsii shponochnykh soedineniy)

PERIODICAL: Standartizatsiya, #1, Jan-Feb 1957, p 53-57 (USSR)

ABSTRACT: The author criticizes the Soviet key joint standards now in use ("OCT HKM 4079" through "OCT HKM 4087", "OCT HKM 4091" through "OCT HKM 4093", and "OCT 7227-54") and makes suggestions concerning coordination and unification. He states that the standards are not coordinated and make the connections non-interchangeable. Dimensions of keyways on shafts and bushings do not conform with calculation data. In some instances this leads to overstressing, and in others to underloading of shaft keyways. The standards do not indicate range of shaft diameters for different cross sections of keys. The depth of shaft keyways corresponds to cast iron keys only, and is insufficient for unhardened steel keys. The statements are accompanied by formulas and comparative dimension tables. The conclusion is made that the existing key joint standards must be revised and based on a unified calculation method, having in view a centralized production of joint elements.

Card 1/2

Principles of Coordinated Standardization of Key Joints

28-1-16/42

The article contains 4 tables and 3 diagram drawings.

ASSOCIATION: Experimental Research Institute for Metal Cutting Machine Tools
(Eksperimental'nyy nauchno-issledovatel'skiy institut metallo-
rezhushchikh stankov)

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Lyubomirskiy, E.I., Engineer, 28-4-21/35

TITLE: On the Problem of Standardization of Spline Connections (K voprosu o standartizatsii shlitsevykh soedineniy)

PERIODICAL: Standartizatsiya, 1957, # 4, pp 66-69 (USSR)

ABSTRACT: The author scrutinizes the two existing Soviet standards and the projected ISO standard for spline shaft connections. He points to shortcomings in both, particularly as regards interchangeability. He also stresses the disadvantages of the dimension system for straight-line tooth profile as recommended by ISO/TC32, of the 20° pressure angle of ISO as compared with the 30° pressure angle standardized by ГОСТ 6033-51, etc. In his opinion, ГОСТ 1139-55 should be completed by the addition of two more series for straight-line profile; this standard would then be in many respects better than the ISO standard.

He declares that the two Soviet standards are better in all technical respects than the corresponding ISO standards, and he sees no reason for abandoning them to accept the international standards. The article contains also a statement that layout and tolerances in Soviet plants differs from that in the Soviet

Card 1/2

On the Problem of Standardization of Spline Connections

28-4-21/35

satellite states, resulting in non-interchangeability.
There are 4 figures and 1 table.

ASSOCIATION: ENIMS

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Lyubomirskiy, E.I., Engineer SOV/28-58-5-27/37

TITLE: The Standardization of the Basic Definitions of Deviations of Shape and Mutual Layout of Surfaces (O standartizatsii osnovnykh opredeleniy otkloneniy formy i vzaimnogo raspolozheniya poverkhnostey)

PERIODICAL: Standartizatsiya, 1956, Nr 5, pp 72 - 73 (USSR)

ABSTRACT: The author disagrees with L.A. Boldin's suggestions on the definition of some of the basic terms for the deviation in shape and layout of straight-edged surfaces in machine parts. He points out that many of the definitions proposed by Boldin are unnecessary or incorrect and that there is no **need** to incorporate them in a separate standard. There are 2 Soviet references.

ASSOCIATION: ENIMS

1. Drafting--Standards

Card 1/1

SUM-SHIK, M.R.; LYUBOMIRSKIY, E.I.

Standardization of cam mechanisms in the machine-tool
industry. Standartizatsiya 24 no.3:13-17 Mr '60.
(MIRA 13:6)

(Cams--Standards)

TOLOCHKO, A.D.; LYUL'KIN, I.A., glavnyy inzhener; LYUBOMIRSKIY, G.S.,
nachal'nik tekhnicheskogo otdela.

Glue made of chrome leather waste products. Leg.prom. 15 no.12:
45-46 D '55. (MLRA 9:5)

1. Direktor kozhevennogo zavoda No.7 "Bol'shevik" (for Tolochko)
(Glue) (Leather industry--By-products)